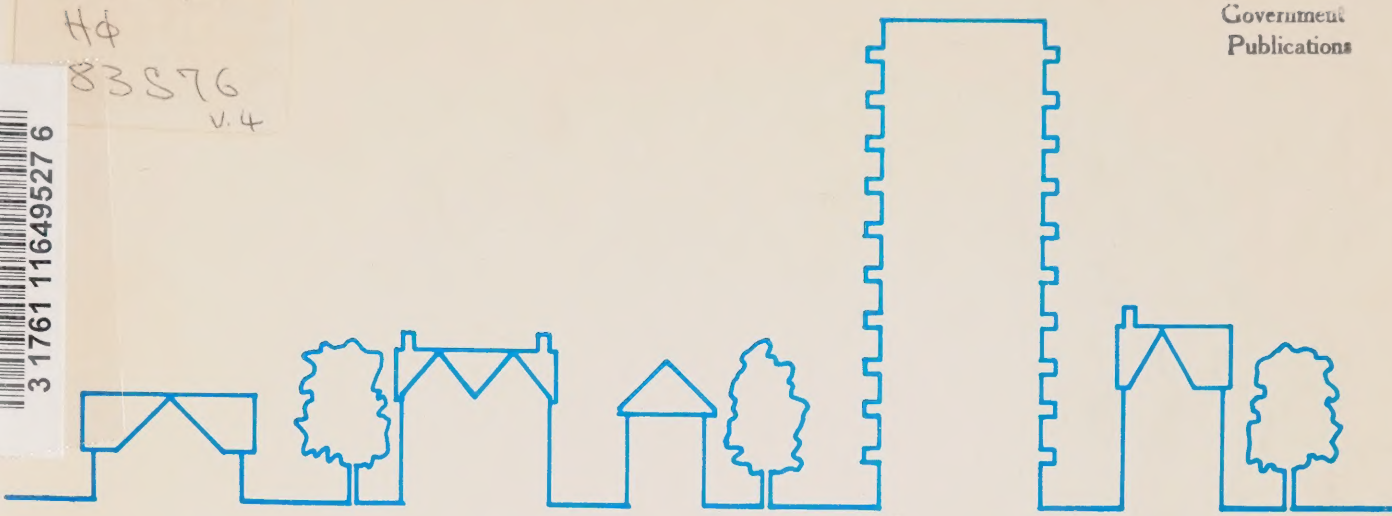

STUDY OF RESIDENTIAL INTENSIFICATION AND RENTAL HOUSING CONSERVATION

PART 3 : RESIDENTIAL INTENSIFICATION AND FUTURE HOUSING NEEDS

3.2 : ECONOMIC ISSUES

PREPARED FOR
THE ONTARIO MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING
AND THE ASSOCIATION OF MUNICIPALITIES OF ONTARIO

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VOLUME 4

NOTE:

This is a consultants' report. Any statements or opinions expressed herein are those of the writers or of persons quoted and, unless otherwise noted, are not necessarily endorsed by the Ministry of Municipal Affairs & Housing, Government of Ontario, or the Association of Municipalities of Ontario.

FOREWORD

This study was commissioned jointly by the Ontario Ministry of Municipal Affairs and Housing and the Association of Municipalities of Ontario. Funding for the study was provided by the Ontario Ministry of Municipal Affairs and Housing through the Housing Renovation and Energy Conservation Unit of the Community Housing Wing. The Ministry's chief representative on the study was Mr. George Przybylowski of the Housing Renovation and Energy Conservation Unit. In this capacity, Mr. Przybylowski was the prime client contact throughout the study process and the consultants wish to express their gratitude to him for his considerable personal committment to this study and the many creative and useful suggestions he made during the course of the investigations.

The findings, conclusions and recommendations contained in the various volumes of the study report are those of the consultants as are any factual errors they may contain. The report does not constitute Ontario Government or A.M.O. policy but is a report to these two organizations for their consideration.

Peter G. McInnis
Study Director

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GENERAL INTRODUCTION

This document forms one volume of an eleven volume study report commissioned jointly by the Ontario Ministry of Municipal Affairs and Housing and the Association of Municipalities of Ontario (A.M.O.) in July, 1982. The prime objectives of the study were:

1. To examine the opportunities and constraints that exist for meeting some of the future additional housing needs in Ontario during the 1980's and 1990's through the intensification of existing residential neighbourhoods.

2. To examine some of the major forces at work that have and could threaten the conservation of the existing stock of rental housing and the tenants that occupy this stock.

These objectives were formulated in response to concerns on the part of the Ministry and A.M.O. regarding recent and emerging trends in housing and urban development and population growth and change in Ontario.

It is safe to assume that there will continue to be a demand for more rental and ownership housing units in Ontario during the 1980's and 1990's due to both an absolute increase in population and an increase in the number of households. However, there is growing evidence that this demand could be different in nature than during the last decade. While demand will continue to be focused in urban areas, there will likely be increasing pressure for inner city housing particularly in the larger urban centres such as Toronto, Ottawa and Hamilton. Also, households are getting smaller and older; and more people are beginning to accept the prospect of never being able to afford to own a home. These trends suggest that there will be an increasing demand for smaller dwellings. While consumer preference information may not support this, the general state of the economy and the future affordability of housing may dictate these demands.

The Government of Ontario and the Association of Municipalities of Ontario are concerned about how these additional and somewhat different housing needs of the 80's and 90's will be met, particularly in light of the downturn in the construction of new private rental housing; the economic prospects for the 80's and 90's and the likely restraints on public expenditures related to new facilities and services and socially assisted housing; and the increasing difficulty of providing new housing through large scale redevelopment and/or a further expansion outwards of Ontario's urban fabric.

There are two major approaches to creating additional housing: 1) building new and 2) making more efficient (intensive) use of the housing stock that currently exists. This study is aimed primarily at the latter and specifically at the potential for meeting some of the future housing needs in

the Province through the conversion of the existing stock of some 1,200,000 grade-related owner occupied dwellings in the Province. The extent to which this study is concerned with new housing was limited to the opportunities that might exist for small scale residential infill in residential neighbourhoods.

In addition to being concerned about meeting additional housing needs, the Ministry and A.M.O. were concerned about conserving the existing rental stock in a safe and livable condition for at least the same number of households as it currently accommodates. While this aging/conservation issue is by no means a new one, the nature of the issue will likely be quite different in the future. Until the late 1950's, the vast majority of housing in the Province was grade-related and owner occupied, and the conservation of these types of dwellings usually happened as a matter of course without much concern or assistance on the part of governments. In the last 30 years, however, the housing stock profile has changed dramatically with the advent of the high-rise apartment building. Rental apartments in multiple unit buildings form a much larger proportion of the stock than ever before. Approximately two-thirds of the over one million rental housing units in Ontario are located in high-rise or low-rise/walk-up multiple unit apartment buildings. Forty percent or 434,000 of the total rental units are in high-rise buildings. The conservation of the apartment rental stock has never been a serious issue in the past because of the relative newness of this stock. However, as these buildings age during the 80's and 90's (many are already 20 years old), serious attention will have to be given to the efforts that will be required to maintain these units in a safe and livable condition and within the economic reach of a large majority of the population. Therefore, the second objective of this study was in part, to examine the type of building repairs and improvements (and their associated costs) that will be required to conserve the Province's stock of some 434,000 high-rise rental apartments over the next 20 years.

A second rental housing conservation concern of the Ministry and A.M.O. had to do with the perceived loss of low-income rental accommodation that has traditionally been available in the form of rooms and apartments in grade-related dwellings in older neighbourhoods. Specifically, the study was to examine the extent of the loss of this type of housing due to demolition and deconversion resulting from the gentrification of these dwellings and the impact these losses have had on tenants.

The investigations were carried out by a series of five individual consultants working under the direction of a sixth consultant retained to coordinate and direct the study investigations. The work of each consultant was monitored and reviewed by a core study group made up of the five consultants, the study director and representatives of MOMAH and AMO.

Core Study Group

Study Director:	Peter McInnis Klein & Sears Research and Planning Limited
Consultants:	Michael Adams Environics Research Group
	Jack Klein Klein & Sears, Architects
	Greg Lampert Clayton Research Associates
	Frank Lewinberg Lewinberg Consultants
	Peter Milligan Walker, Poole, Milligan
Ministry Representatives	Sue Corke Gary McAllister George Przybylowski
A.M.O. Representatives:	Mayor W. McLean Town of Ajax
	Gwyn Simmons City of Ottawa Non-Profit Housing Corporation
Special Assistant To Core Group:	Betty Kaser

While the consultants' work on this study began formally at the beginning of July, 1982, some considerable effort was spent in advance of this start-up by a steering committee of Ministry and AMO representatives in developing terms of reference and a work plan with the Study Director that reflected the findings of an extensive and detailed review of the literature pertaining to the issues in question. This literature review was carried out by David Hulchanski for the Ministry during April and May of 1982 and has been published under separate cover. The prime purpose of this review was to identify the extent to which the issues in question had already been considered and the findings and conclusions that had been reached in order that the consultants' work could be focussed on those issues about which there is limited knowledge or understanding. Also, this review provided a valuable basis for establishing certain propositions to be tested in the study.

The investigations, particularly those relating to Objective #1, were carried out on a case study area basis in the municipalities of Toronto, North York, Hamilton, Kingston, Woodstock and Ottawa with special input from municipal officials in Thunder Bay. These municipalities were selected to reflect the fact that many of the issues under investigation were more associated with larger urban areas as well as to provide, at the same time, a range of sizes of municipalities for comparative purposes.

The overall study report is organized into 11 separate volumns. These 11 volumes follow the 5 part organization of the findings, conclusions and recommendations of the study investigations as indicated below:

PART #	TITLE (Prime Consultants)	VOLUME #
1	Summary of Findings And Recommendations (Klein & Sears)	1
2	Economic And Demographic Trends for the 80's and 90's (Clayton Research Associates)	2
3	Residential Intensification And Future Housing Needs	
	3.1 Physical Potential (Clayton Research Associates)	3
	3.2 Economic Issues (Klein & Sears and Clayton Research Associates)	4
	3.3 The Supply Process (Environics Research Group and Clayton Research Associates)	5
	3.4 Tenant Demand (Environics Research Group)	6
	3.5 Neighbourhood Impact And Resistance (Environics Research Group and Lewinberg Consultants)	7
	3.6 Municipal And Provincial Policies And Regulations (Walker, Poole, Milligan)	8
4	Conserving The Existing Rental Housing Stock	
	4.1 Recent Rental Stock Losses and the Impact of Deconversion (Clayton Research Associates and Lewinberg Consultants)	9

This particular volume (Volume #4) of the study report was prepared by two different consultants. Mr. Jack Klein of Klein & Sears was responsible for the first part of this volume, dealing with the financial feasibility of conversion and infill housing. Mr. Frank Clayton of Clayton Research Associates prepared the second part of this volume dealing with the economics of conversion and infill from the point of view of the municipality.

INTRODUCTION TO PART 3

This part of the study deals with Objective #1

> "To examine the opportunities and constraints that exist for meeting some of the future additional housing needs in Ontario during the 1980's and 1990's through the intensification of existing residential neighbourhoods"

"Residential Intensification" as used in this study means increasing the number of households accommodated in existing buildings and/or on existing serviced land in already built-up parts of urban areas through conversion of existing structures and through additions to existing structures and the building of new structures on vacant or near vacant land. Intensification as used in this study is achieved with little or no demolition of existing buildings.

The interest in intensification reflects emerging housing market trends, changing urban population profiles and the economics of new housing construction, in particular new private rental apartments. In addition, the interest in intensification as a means of meeting some of the future housing needs in Ontario stems from a number of factors not the least of which is the economic restraint under which governments at all levels now find themselves operating and the prospect of similar conditions prevailing over the next several years. These restraint conditions have caused some governments to cut back on or freeze spending on new facilities and services and seriously assess the efficiency with which existing facilities are used. The argument in support of intensification to provide additional housing is, in part, due to these economic restraints and the potential that may exist for increasing the number of households being served by the existing urban infrastructure.

This study defined 7 basic forms or models of conversion and infill that meet the above definition of intensification:

1) changing grade-related type dwellings from single household use to accommodate a number of unrelated households or individuals with no or minor physical alterations (e.g. small group homes for seniors and rooming houses or a roomer in an owner-occupied dwelling)

2) changing grade-related type dwellings from single household use to self-contained accommodation for more than one household through physical alterations (e.g. duplexes, triplexes, etc.);

3) building an addition (vertically or horizontally) to a grade-related dwelling to increase the number of dwelling units;

4) building a second or third separate dwelling on a lot which presently has one dwelling unit in place (e.g. back lot or side lot development);

5) building several separate dwelling units on a lot which already has a multiple family development in place (e.g. building on landscaped open space around a high-rise building);

6) converting existing obsolete non-residential space to residential use (e.g. over stores along arterials); and

7) building new multiple residential units on vacant or near vacant sites in commercial areas (e.g. mixed-use projects in core areas).

While Models #6 and #7 are critical forms of intensification, the opportunities and constraints related to these models are well researched and documented. In fact, in the past few years the Ministry itself has conducted two investigations into the potential for residential and mixed commercial and residential infill development in the core areas of Ontario municipalities. This study concerned itself soley with investigating conversion and infill potential in existing residential neighbourhoods because of the paucity of good information that exists on the subject. In particular, emphasis was placed on the conversion models and their potential application to the 1.2 million grade-related owner occupied dwellings in Ontario urban centres of more than 10,000 people.

Models #2-5 are graphically illustrated in Figures 1-6 on the following pages. These figures provide just a few examples of the multitude of different physical forms the various types of intensification could take.

The examination of the opportunities and constraints associated with the creation of additional housing by means of the 5 models is examined in terms of:

- the physical potential of intensification vis-a-vis such issues as the convertability of various house forms, current intensity of use and the opportunities for infilling around or adding to existing dwellings;

- the economics of intensification in respect to the costs of creating new accommodation and rents required to pay for this accommodation as well as the economic impact of intensification on municipalities;

- the supply process or who could and would undertake various forms of intensifiction and the motivations for doing so as well as the capability and attitudes of the construction industry and lenders to facilitate intensification activities;

- the market demand for various types of accommodation that could result from intensification among various segments of the tenant market;

- community and neighbourhood impact and resistance that may occur as a result of or in anticipation of increased intensification activities in the various types of neighbourhoods that are traditionally found in the urban fabric of Ontario municipalities;

- government policies and regulations and in particular, municipal official plans and zoning by-laws.

FIGURE 1 – Model 2

BUNGALOW CONVERSION

- a self contained one bedroom unit is provided in addition to the existing ground floor unit
- existing basement stairs are located adjacent to the back entrance facilitating conversion
- window wells or excavation to create a sunken patio can increase natural light for a basement apartment
- if the basement is already finished and/or a bathroom is in place, the conversion is likely to be less costly

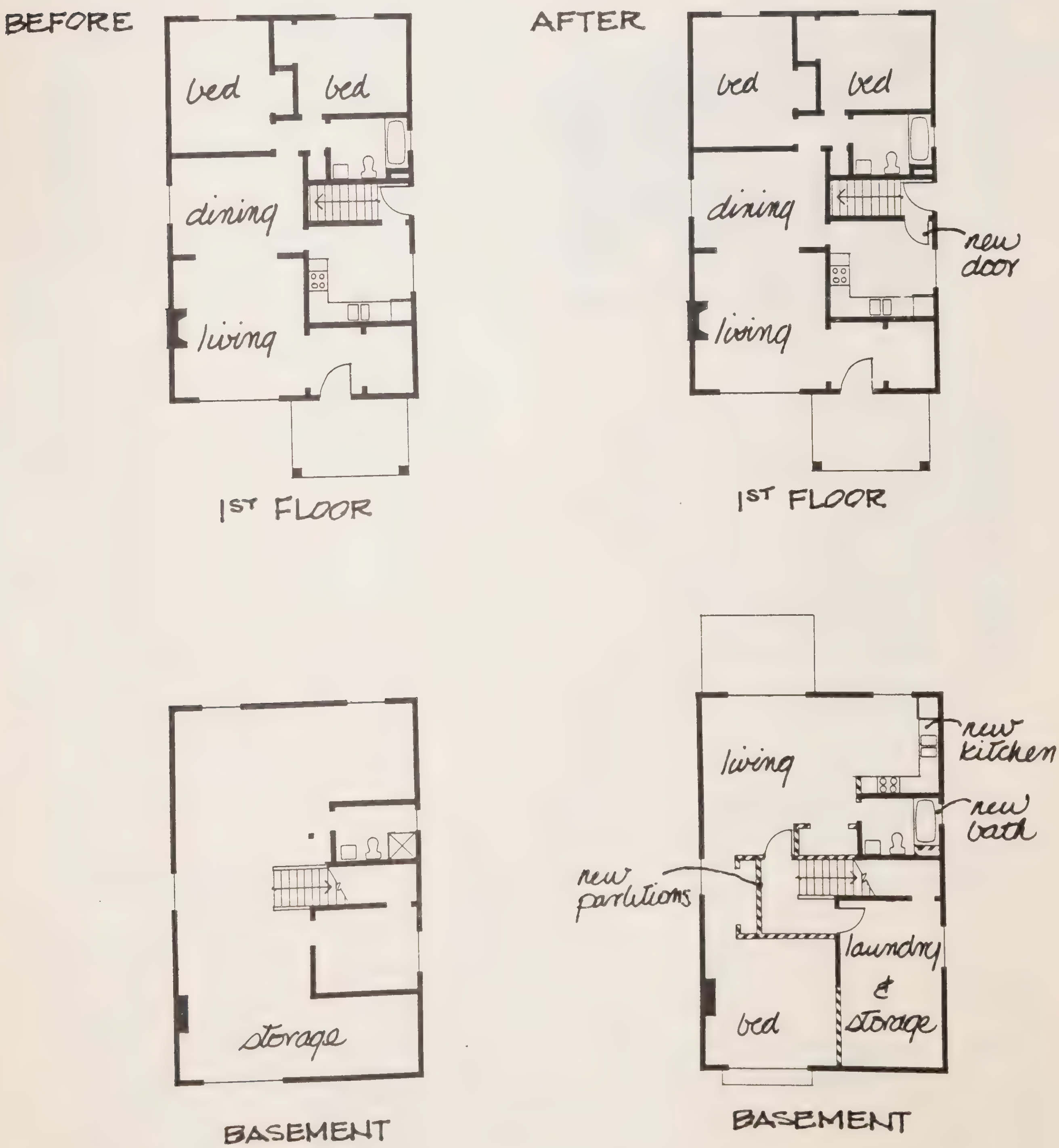


FIGURE 2 – Model 2

CONVERSION OF A THREE STOREY SEMI-DETACHED HOUSE

- the house is converted to provide a one bedroom unit on the ground floor and basement and a two bedroom unit on the second and third floors
- stairs and entrances are generally found on the party wall of semi-detached homes. This plan form lends itself readily to natural hall circulation
- decks can be added to second or third floors to provide additional space
- a larger house such as this provides more options for conversion. The house could be converted in a number of ways including three or four self-contained units, one on each floor or leaving the existing basement and converting to provide a bachelor apartment on one floor and a two bedroom apartment on the remaining floors

FIGURE 3 – Model 2

CONVERSION OF A TWO STOREY DETACHED HOUSE

- the house is converted to provide a one bedroom unit on the ground floor and a one bedroom unit on the second floor
- the centre hall plan of this house is not as easily adaptable as the side hall plan of the previous illustration. The resulting circulation pattern within the units tends to be from room to room rather than off a hall

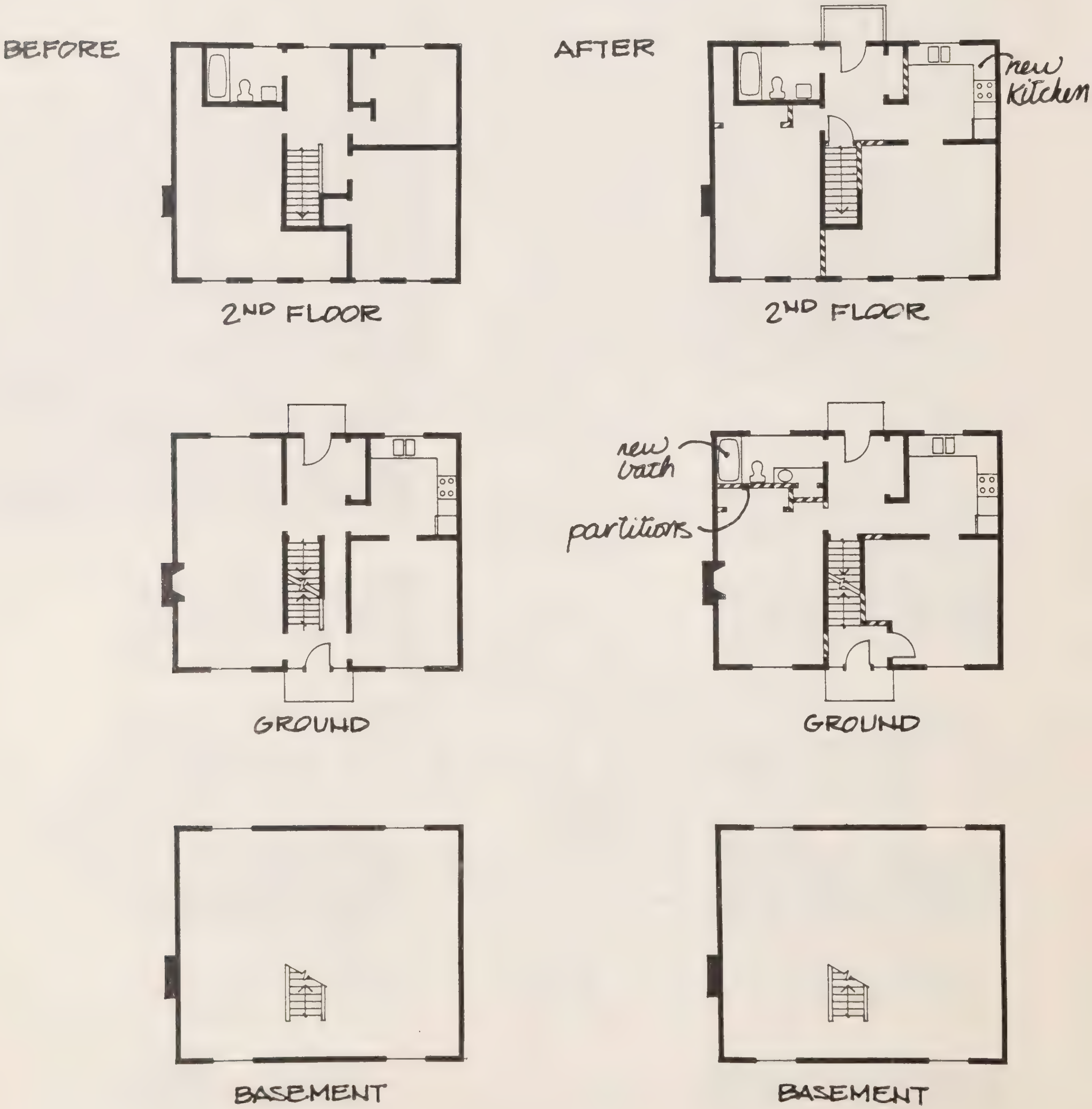


FIGURE 4 – Model 3

VERTICAL ADDITION

- a second storey is added to an existing bungalow to provide a second self-contained dwelling unit
- as the ceiling of the ground floor unit is exposed during construction, timing and weather are important concerns in planning for this type of addition

HORIZONTAL ADDITION

- an existing garage is converted to residential space and provides a bachelor unit
- garages frequently have an existing back door and windows which can be incorporated in the conversion
- if the plumbing in the existing house is on the side of the house adjacent to the garage, the addition is likely to be less costly
- as this unit is grade related and provides access without stairs, it is particularly appropriate for a "granny unit"

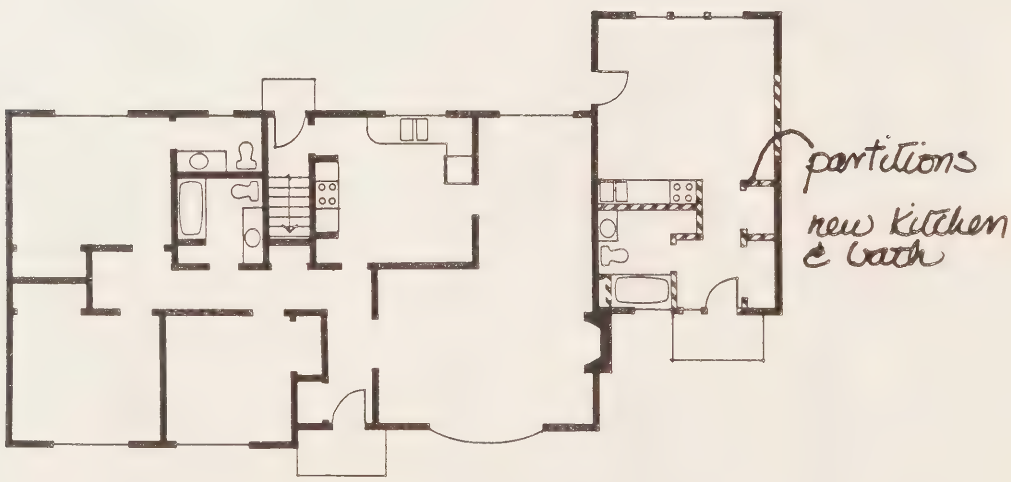


FIGURE 5 – Model 4

BACK LOT INFILL

- new housing units are built at the back of the lots on which there are existing houses
- access is from a back lane in one example and from the street using the side driveway in the other
- the length of the lot and the location of the house on the lot are critical factors. Generally urban land use patterns will accommodate this type of infill more readily than suburban land use patterns where the house is typically situated close to the centre of the lot
- the new housing could provide more than one unit or larger units by building more than one floor

BACK LANE ACCESS

SIDE DRIVE ACCESS

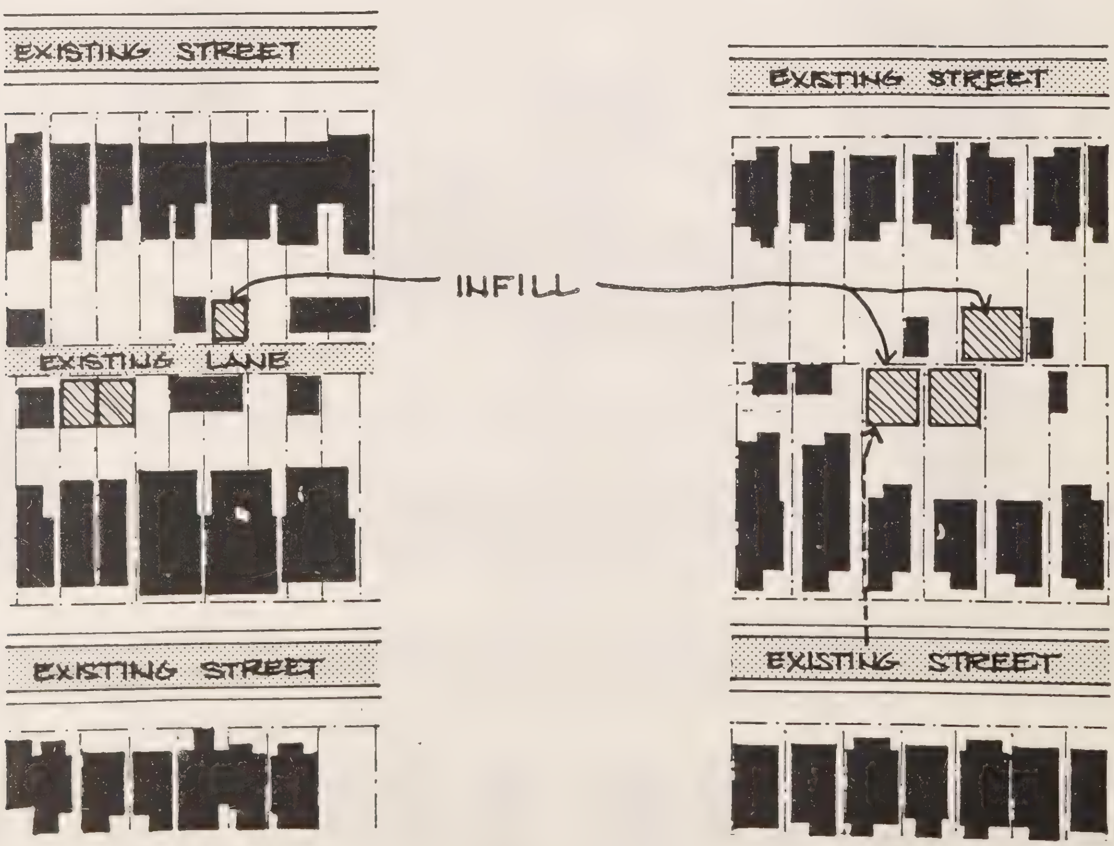
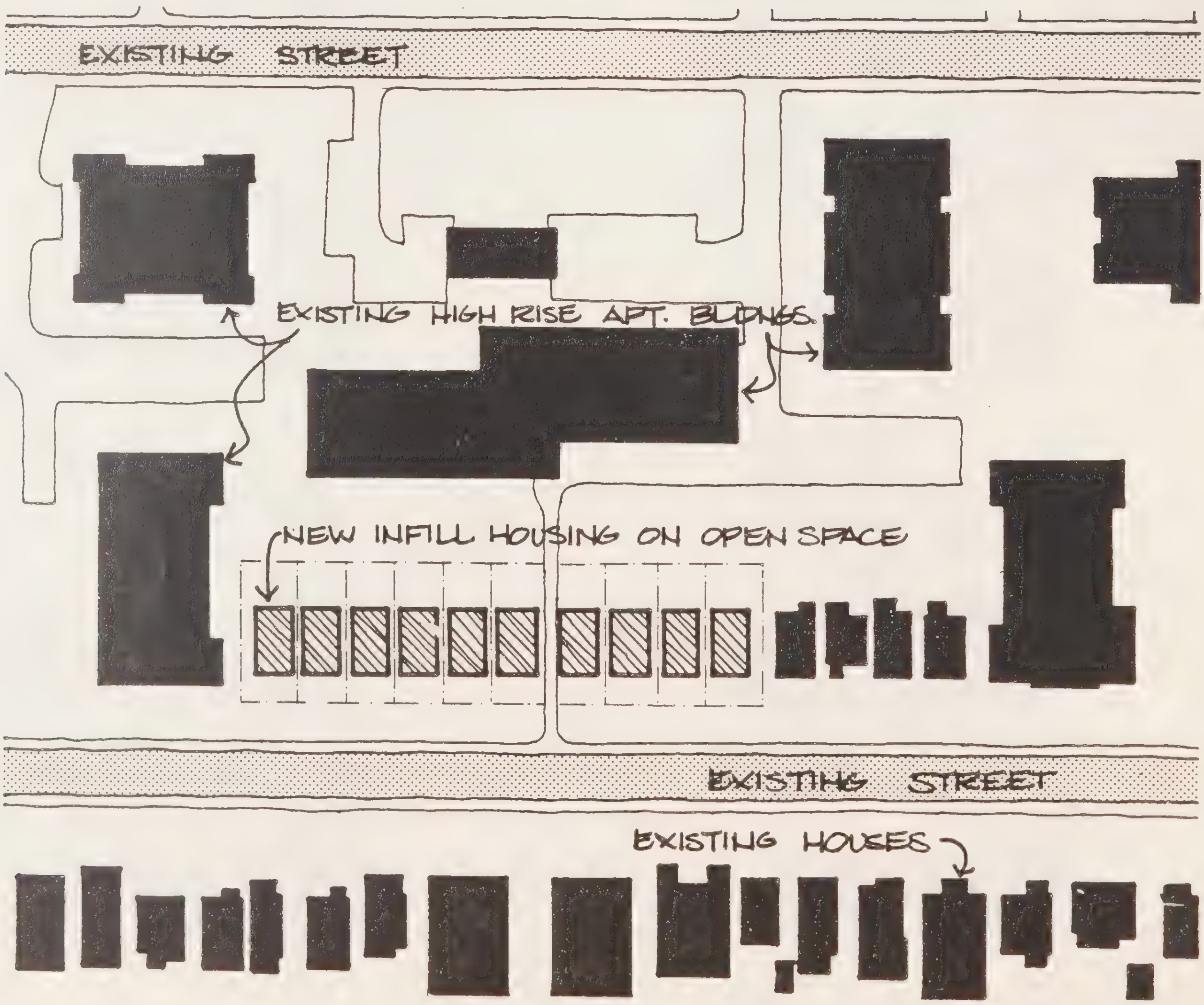


FIGURE 6 – Model 5

INFILL ON APARTMENT GROUNDS

- a number of single family houses are shown as infill in the landscaped open space of a high rise apartment building. The new housing could also take the form of semi-detached housing, row housing or low rise apartment structures
- the housing type could be selected to be consistent with the surrounding neighbourhood
- existing underground garages for the high rise apartment buildings often have surplus spaces which could be used for the new infill housing



PART 3.2.1:

THE ECONOMICS OF INTENSIFICATION ACTIVITIES

Prepared by:
Klein & Sears, Architects

3.2.1 THE ECONOMICS OF INTENSIFICATION ACTIVITIES

1.0 INTRODUCTION

This part of the study addresses the issues of what the costs would be of creating additional rental accommodation through the five different intensification models and whether or not these costs could produce rents which are competititve in price with comparable existing or new housing. In other words, do infill and conversion make economic sense as ways to create affordable housing, and under what conditions do these approaches work?

Most economic feasibility analyses of new private sector housing opportunities focus either on what the break-even rents would be and whether these rents (or purchase prices) would be competitive in the existing market place, or they estimate returns on investment assuming competitive market rents/prices. Such approaches are valid insofar as the intensification models are concerned if one were to assume that all such activity were to be undertaken by private real estate developers/investors. However, unlike other forms of housing creation, residential intensification, as defined in this study, can and would very likely be undertaken by individual homeowners. In fact, the individual homeowner will probably have to be relied on to a large extent if the physical potential that exists for creating new rental units through intensification Models #1 - -#3 is to be realized. This is not to suggest that housing entrepreneurs will not get involved in the types of intensification activity under discussion, but those that do are more than likely to be single investor entrepreneurs and small development companies.

The motivations of homeowners to undertake these activities, while basically financial in nature, differ substantially from those of the investor. The homeowners or prospective homeowners would undertake a conversion primarily in order to be able to afford to buy or continue to own their own home. An investor, on the other hand, is concerned with maximizing the return on monies that he or she has to invest and will be comparing intensification opportunities with other investment possibilities. For this reason, the economics of intensification must be examined from two different perspectives.

In examining the economics of Models #1 - #5 from the standpoint of an investor, we developed a very simple pro forma model that examines the break-even rents that might result under varying assumptions concerning initial acquisition costs and a number of constants including amount of equity, return on equity, construction costs, interest rates and operating costs. The structure of the model is explained in the following section as are the asusmptions concerning the variables noted above.

Our examination of the economics of intensifiction from the standpoint of individual homeowners is dealt with in the following sections in a less formal way than the investor. Using the basic principles and assumptions of the investor model, the economic implications of intensification to the homeowner

are dealt with through discussion of specific examples of typical homeowner situations. These discussions are limited to Models #1-#3 since in our view, the likelihood of a homeowner undertaking the type of intensification activity implied in Models #4 and #5 is limited.

It is important to point out that the economic analysis presented in this part of the report is not based on real or actual case study situations, but rather on very general and hypothetical situations. They are meant to be illustrative only and under different assumptions concerning such things as equity, could produce vastly different break-even rents.

2.0 THE ECONOMIC MODEL

The model or framework that has been used to assess the economics of the five different intensification models for the non-resident investor/entrepreneur was developed to provide a simplified method of organizing information which allows various decision-makers and officials to review the variables that determine the monthly costs of each unit created and, thereby, the "break-even" rents required to pay for these costs. The model divides costs into three categories - Creation Costs, Financing Costs and Operating Costs. The assumptions regarding each of these categories of costs are outlined below.

The variables which are most significant in terms of costs for the new homeowner or investor wishing to undertake the five forms of intensification are interest rates, acquisition costs and construction costs. Of these, interest rates are both the most changeable and most significant. While construction costs are relatively predictable, interest rates have fluctuated greatly over the last few years and changes in rates can be dramatic in their effect.

Interest rates are less of an issue for the existing homeowner who wishes to undertake infill or conversion. In situations where the residence is substantially paid for, the funds which need to be borrowed and financed at current rates, are limited mainly to funds required for construction.

One caution with respect to the application of this model is necessary. The model is intended to assist in judging a particular hypothetical project on its own merits. It does not take into consideration other factors such as the effect of depreciation allowances, the possibility of tax deferrals or the effect of this project on an investor's larger portfolio.

Creation Costs

The model divides creation costs into four categories:

- Acquisition Costs include the purchase price or cost of acquiring the property which is to be altered and/or added to. Models #1 - #4 all deal with altering and/or adding to a hypothetical 1,800 square foot, single family dwelling. In order for the model to have applicability to the full range of market conditions between and within the six case study area municipalities, four different acquisition costs were established for this hypothetical dwelling - $50,000., $100,000., $150,000. and $200,000. Acquisition costs are not applicable in the Model #5 situation.

- Construction/Alteration Costs include the costs of purchasing the material and labour to carry out the physical construction or alteration work. Construction costs vary from region to region, and without a precise definition of the actual work to be carried out, these costs have been estimated to reflect average costs for the type of construction work

involved. Small projects tend to be higher in cost on a per unit basis than do large projects and for this reason the costs per square foot for new construction vary between Models #3, #4 and #5. Where construction costs cannot be evaluated on a per square foot basis, gross estimates were taken based on experience with similar construction or alterations, (e.g. Model #2).

- Soft Costs include all those other non-construction costs encountered when constructing or altering a building. These include costs for permits, legal charges, architects or engineers fees, the cost of borrowing money during construction, etc. Soft costs are assumed to be 30% of construction costs for all new construction and 15% of alteration costs for the renovation of existing buildings.

- Holding Costs generally refer to the financing costs related to the original property that was acquired for the period of construction or alteration during which the property is vacant. As noted, Models #1 and #5 have no holding costs by definition. The holding periods and, thereby, the holding costs for Models #2 - #4 vary due to the nature of the construction and/alteration being carried out.

Financing Costs

The model assumes that the investor's equity in the project is 25% of Creation Costs and that the balance of the Creation Costs are financed with an interest only mortgage at 12%. An "interest only" mortgage is assumed for convenience of calculation. In all likelihood, many investors would arrange conventional mortgages with principal and interest payments based on a 25 year amortization. However, the impact on break-even rents of principal payments in this case would be nominal given that in the first year of such a mortgage, the principal payments would only add approximately 60¢ per $1,000. of the mortgage value per month to the overall costs. For example, on a $75,000. mortgage against a newly created duplex, the principal payments per month would add $22.50 to the break-even rents for each apartment.

Operating Costs

All the models have three categories of costs under this heading - Property Taxes, Maintenance/Upkeep and Insurance - while some models also have a fourth category - Heating and Utilities.

- Property Taxes are estimated at 1% of Creation Costs. Obviously property taxes will not follow such a simple formula throughout the Province given the tremendous number of possible variables that could impact on the assessment and mill rates used to calculate the taxes.

- Maintenance/Upkeep includes a variety of things that a landlord/owner has to do to keep a building in a livable and marketable condition (e.g. painting, plumbing and heating service and repairs, yard upkeep, etc.). We have arbitrarily set an amount of 25¢ per square foot per year for older

dwellings and 10¢ per square foot for new construction to cover these costs. This constant has been established with the understanding that Maintenance/Upkeep costs will not obviously follow such a simple ratio and can vary widely depending on the original condition of the property acquired, the quality of construction and alteration work, the type of tenants and many other factors which are impossible to allow for in our hypothetical models.

- Insurance, like Maintenance/Upkeep, is highly variable depending on location, age, quality and type of structure, occupancy, etc. We have assumed a cost of 35¢ per $100. of building value in all models, knowing that a rooming house with common cooking facilities in a 50 year old house will be more expensive to insure and a new single family rowhouse will be less. In calculating building value, we have assumed, in all cases, 75% of original acquisition cost plus all new construction and alteration costs.

- Heating and Utilities are only included in the costs associated with Models #1, #2 and #3, where they would be common expenses for all the units because individual metering systems are not provided for.

3.0 MODEL #1 ANALYSIS

> "Changing grade-related type dwellings from single household use to accommodate a number of unrelated households or individuals with no or minor physical alterations (e.g. small group homes for seniors and rooming houses or a roomer in an owner-occupied dwelling)"

As the above definition implies, this type of activity could be undertaken both by an individual homeowner or a non-resident investor landlord. There is really no need to examine in any detail the economics of a homeowner undertaking to rent out one or more rooms in his or her house. The added costs of doing so are nominal and the rent received, forgetting the tax implications, would help to reduce the housing costs of that homeowner by whatever amount is received. However, the advantages to homeowners, particularly those who may be having difficulty in paying for the costs of carrying and operating their house, should not be underestimated. For example, a senior citizen living in his or her own mortgage free home in Toronto on a fixed income of $800. per month before taxes and paying approximately $250. per month on heat, hydro, water and sewer, taxes, insurance and maintenance/upkeep could conceivably pay for these costs completely through the income received by renting out an unused bedroom. The income received in this way could make the difference between that person being able to stay in their home or being forced to sell it and use the equity to live on in rental accommodation.

The following pro forma (see Figure 1) examines the economics of a rooming house from the point of view of an investor. The analysis looks at the break-even monthly rents per room that would be required to pay for the costs of buying an 1,800 square foot dwelling and operating it as a 6 room rooming house. As Figure 1 indicates, the break-even monthly rents per room (including heat and utilities) under these assumptions would be $115., $204., $292. and $380. respectively for purchase prices of $50,000., $100,000., $150,000. and $200,000. The $115. ($27. weekly) rent for a room would seem to be a reasonable rent almost anywhere in the Province where one could purchase such a dwelling for $50,000. Perhaps even the $205. ($47. weekly) may be reasonable in Toronto (and perhaps other large centres) given that the average monthly rent for a bachelor apartment in the Toronto market is close to $300. Obviously, single family dwellings at the high end of the market could not be feasibly purchased and turned into a rooming house by an investor.

FIGURE 1: MODEL #1 BY NON-RESIDENT INVESTOR TO ACCOMMODATE 6 INDIVIDUALS

CREATION COSTS				
1. Acquisition Costs	50,000.	100,000.	150,000.	200,000.
2. Alteration Costs	---	---	---	---
3. Soft Costs	---	---	---	---
4. Holding Costs	---	---	---	---
Total Creation Costs	50,000.	100,000.	150,000.	200,000.
Equity Position (25% of Creation Costs)	12,500.	25,000.	37,500.	50,000.
Remaining Costs to Finance	37,500.	75,000.	112,500.	150,000.
FINANCING COSTS				
1. Return on Equity (10%)	1,250.	2,500.	3,750.	5,000.
2. Remaining Costs @ 12% (interest only)	4,500.	9,000.	13,500.	18,000.
Total Financing Costs	5,750.	11,500.	17,250.	23,000.
OPERATING COSTS				
1. Taxes	500.	1,000.	1,500.	2,000.
2. Insurance	110.	220.	330.	440.
3. Maintenance/Upkeep	450.	450.	450.	450.
4. Heat and Utilities	1,500.	1,500.	1,500.	1,500.
Total Operating Costs	2,560.	3,170.	3,780.	4,390.
TOTAL ANNUAL COSTS	8,310.	14,670.	21,030.	27,390.
TOTAL ANNUAL COSTS PER ROOM	1,385.	2,445.	3,505.	4,565.
BREAK-EVEN MONTHLY RENTS PER ROOM	115.	204.	292.	380.
(APPROXIMATE WEEKLY)	(27.)	(47.)	(68.)	(88.)

4.0 MODEL #2 ANALYSIS

> "Changing grade-related type dwellings from single household use to self-contained accommodation for more than one household through physical alterations (e.g. duplexes, triplexes, etc.)."

This type of intensification activity could be undertaken by either a non-resident investor or by an owner-occupant.

Figure 2 analyzes the economics for an investor of buying an existing 1,800 square foot single family dwelling and converting it into two (approximately equal sized) self-contained apartments. Construction costs are estimated at $15,000. to cover the installation of a second kitchen, a second bathroom, and the separation of units. Soft costs are assumed at 15% of construction costs as no new construction is required.

Our analysis of the economics of converting an 1,800 square foot house into 2 self-contained apartments does not show break-even rents, which compare favourably with the average rents for a conventional 2 bedroom apartment in most of the case study municipalities, which, at the end of 1982, ranged from a high of $447. in Toronto to a low of $310. in Woodstock. On the other hand, we would point out that these economics could change dramatically with a decline in interest rates of only 2% and/or a lower ratio mortgage. For example, the $453. and $730. per unit per month rents received to pay for a $50,000. house and a $100,000. house converted to 2 apartments with a 75% mortgage at 12%, decrease to $390. and $600. per month with a 60% mortgage at 10% interest (assuming a return on the 40% equity of 8%). Another factor to keep in mind is that the rents noted above include utilities such as hydro, as well as parking, which are not included in published statistics on average apartment rents.

While we have made the comparison above between conventional apartment building accommodation and an apartment in a single-family type grade related dwelling, such a comparison is somewhat spurious in that the amenities and features of the two types of accommodation are quite different as are the life style images they prevoke.

Also, it is interesting and important to consider the break-even rents indicated in Figure 2 in relation to the break-even monthly rents required to pay for the costs of building and operating a new apartment unit in a multiple unit building. Using the same assumptions regarding equity and interest rates as in Figure 2 and assuming an average land cost per unit of $5,000. - $10,000., the break-even rent required to pay for the construction and operation of a new private sector, no frills, two bedroom apartment in Ontario would be in the range of 900. - 1,000. per month excluding utilities and parking. Parking charges and utilities could increase this range by $50.+ per month. When one compares the rents noted in Figure 2 with these types of rents, the virtue of "conversion" as a means of creating additional rental housing takes on a different perspective.

It is important to point out that, forgetting tax implications for the moment, the analysis presented above, while oriented towards the investor, is also generally applicable to a prospective homeowner who intends to occupy one of the two units created. The owner-occupant may decide to subdivide the dwelling in a different manner than we have assumed in order to gain more space for his or her personal use and be prepared to accept a lower rental income for the second unit.

Since the motivation of prospective homeowners to undertake such a conversion would be to allow them to stay in or to buy and carry a house that they would not otherwise be able to afford, the important aspect of the economics of Model #2 is the marginal difference in cost between buying and carrying the single family dwelling with and without the rental income.

To illustrate the issue of marginal cost differences more explicitly, let us consider Couple X of Toronto who wish to buy their first home. Both are in their late 20's and both are employed full-time earning a combined income of $35,000. per year. They have managed between them to save approximately $25,000. as a down payment on a house. Based on their joint income they know that they can afford to spend up to $875. per month (30% of gross income) on housing costs (i.e. mortgage interest, taxes, insurance and heat). The house that they would like to buy is priced at $100,000. and with an interest only mortgage at 12% it will cost them approximately $980. per month to carry and operate. Obviously this is more than they are prepared or able to spend. They realize that this 1,800 square foot house is larger than they need at the present time but they do want to own their own home. In examining the market opportunities of finding a house which they can afford to buy and occupy entirely, they find that in order to meet locational and other criteria, their options are limited. Therefore, they decide to buy the house and borrow the additional money required to convert part of it into a self-contained rental apartment. These added costs of conversion, as noted in Figure 2, amount to $22,500. (including alteration costs, soft costs and holding costs) for which they are able to acquire a second mortgage at 13% interest adding an additional $243. per month to the $980. per month costs noted above for a total cost of $1,230. per month. To these costs, we should add an additional $22. per month for additional property taxes applicable to a partial income property bringing the total cost to $1,245. per month. Assuming Couple X could rent this extra 1 bedroom apartment for approximately $450. per month, the overall cost of carrying the house would be reduced to about $800. or well within the $875. limit which they set for themselves.

FIGURE 2: MODEL #2 BY NON-RESIDENT INVESTOR TO ACCOMMODATE 2 HOUSEHOLDS

CREATION COSTS				
1. Acquisition Costs	50,000.	100,000.	150,000.	200,000.
2. Alteration Costs	15,000.	15,000.	15,000.	15,000.
3. Soft Costs @ 15% of Alter.	4,500.	4,500.	4,500.	4,500.
4. Holding Costs for 3 months @ 12%	1,560.	3,000.	4,500.	6,000.
Total Creation Costs	71,000.	122,500.	174,000.	225,500.
Less Equity Position (25% of Creation Costs)	17,750.	30,625.	43,500.	56,375.
Remaining Costs to Finance	52,250.	91,875.	130,500.	169,125.
FINANCING COSTS				
1. Return on Equity (10%)	1,775.	3,060.	4,350.	5,635.
2. Remaining Costs @ 12%	6,270.	11,025.	15,660.	20,295.
Total Financing Costs	8,045.	14,085.	20,010.	25,930.
OPERATING COSTS				
1. Taxes	710.	1,225.	1,740.	2,255.
2. Insurance	160.	270.	370.	480.
3. Maintenance/Upkeep	450.	450.	450.	450.
4. Heat and Utilities	1,500.	1,500.	1,500.	1,500.
Total Operating Costs	2,820.	3,445.	4,060.	4,685.
TOTAL ANNUAL COSTS	10,865.	17,530.	24,070.	30,615.
TOTAL ANNUAL COSTS PER UNIT	5,432.	8,765.	12,035.	15,307.
BREAK-EVEN MONTHLY RENTS	453.	730.	1,003.	1,276.

To further illustrate the economics of Model #2 from a homeowner's point of view and the issue of marginal cost differences, consider Couple Y of Ottawa who own their own 1,800 square foot home without any mortgage valued at $150,000. The couple is retired and are living on a fixed income of $1,200. per month before taxes and are paying approximately $250. per month in property taxes, heat, water and sewer, insurance and maintenance/upkeep. While they can manage these costs, they do not have much flexibility in their income to deal with unexpected expenses or discretionary purchases. They realize they have considerable equity in their home but <u>do not</u> want to sell and move out of their home and neighbourhood to a rental apartment in order to realize their equity and have more discretionary income.

Since their children no longer live at home, they have found that they really don't need or use all of the space in their home. Therefore, they decide to convert part of their home to a self-contained 2 bedroom apartment for rental purposes. As noted above, the costs of doing the conversion amount to $22,500. which they finance through an interest only mortgage at 12%. These interest charges add $225. to the $250. they currently pay bringing their total costs to $475. per month. With the increased property taxes attributable to an income property, their total monthly costs are in the order of $500.

Assuming Couple Y can rent this newly created apartment for $500. per month, they could conceivably live "rent free" and thereby have an extra $250. per month of discretionary income before taxes.

The tax implications on Couple Y of undertaking such a conversion would be minimal. For example, let us assume that Couple Y's $14,400. a year income is received and reported totally by the husband and after deductions he pays taxes on approximately $5,000. ($850.). Also, we will assume that Couple Y's house is registered in the wife's name and that the appraised value of the house on the date of conversion is $150,000. To this value they add $22,500. as noted to convert the dwelling to a duplex giving the building a total value of $172,500.

As noted above, the total annual costs to Couple Y of maintaining their duplexed dwelling after conversion is $6,000. Because the house is in the wife's name, the rent for the newly created apartment is paid to her, giving her an annual income of $6,000. Against this income she is able to claim 1/2 of the expenses of maintaining the duplexed dwelling plus the standard personal exemption leaving her in a tax-free position. Her husband on the other hand would loose the standard married exemption and end up paying about $900. per year more in taxes. Therefore, the tax implications to Couple Y of undertaking the conversion described above would mean that instead of netting $6,000. per year from the rent, they would realize just over $5,000. in additional income per year. (See Table below for simplified tax analysis.)

BEFORE (CONVERSION) AND AFTER TAX SITUATION OF COUPLE Y

	Before	After
Husband		
Earned Income	$14,400.	$14,400.
Less Personal Exemptions	9,460.	6,130.
Taxable Income	$ 4,940.	$ 8,370.
Tax Liability	850.	1,750.
Wife		
Earned Income	---	$ 6,000.
Less 50% of Duplex Operating Costs	---	3,000.
Net Income		$ 3,000.
Less Personal Exemptions		3,700.
Taxable Income		NIL
Tax Liability		NIL

To complete the tax implications of this conversion, let us assume that, in 5 years, Couple Y decide to sell their house at a price of $200,000. for a total profit of $27,500. of which half, or $13,750., is deemed to be attributable to the rental portion of the property. One-half of that profit would be added to the income of the wife in the year of the sale bringing her total income (rent + profit) to just under $13,000. With deductions described above, she would probably end up with a taxable income of approximately $6,000.-$7,000. and be required to pay approximately $1,200.-$1,400. in taxes. If the agreement of purchase and sale were to close early in a tax year, this tax liability could be reduced to almost nothing or eliminated entirely through standard exemptions because of the loss of rental income through the sale of the property during the tax year in which the property is sold.

5.0 MODEL #3 ANALYSIS

> "Building an addition (e.g. vertically or horizontally) to a grade related dwelling to accommodate an increase in the number of dwelling units (e.g. duplex)."

This type of intensification is generically similar to Model #2 in that it involves alterations to an existing single-family dwelling in order to create more than 1 self-contained dwelling out of the original house. It differs from Model #2 in that it relies on the creation of additional space to affect the conversion. While not limited exclusively to smaller single family dwellings, the concept would seem to be particularly applicable to bungalows (for adding a second floor) and smaller two storey dwellings.

As with Models #1 and #2, Model #3 activity could be undertaken by either a non-resident investor/entreprenour or a prospective or existing owner-occupant. In the case of the owner-occupant, the motivations for undertaking this type of activity will probably be similar to the motivations that would lead to Model #2 conversions, but the likelihood of the homeowner undertaking this type of activity in order to create an additional dwelling unit might be less than in the straight conversion of an existing dwelling because of the perceived effort and cost involved in adding on.

While the motivations of homeowners to undertake Model #3 activity might be similar, for the most part, to Model #2, one particular exception should be mentioned. This exception relates to the creation of a separate small self-contained dwelling unit specifically for an older single member of the extended family - i.e. a grandfather or grandmother. For a variety of reasons, economic and otherwise, a family may decide to create such an addition to their existing single-family dwelling for an older single parent rather than have that person move from their existing home to a conventional bachelor apartment. Assuming a 350 square foot addition which contains a bedsitting room, a small kitchen and a small bathroom and has its own private entry cost approximately $20,000. to construct (hard and soft costs), the carrying costs for such an addition, if financed entirely through a first or second mortgage against the property at 12% (interest only), would be $200. per month. Add to this another $75. per month to pay for heat, hydro and an increase in the property taxes due to the addition and the total cost of housing the single senior family member would be about $275. per month; a very reasonable cost (for the senior and/or their children) by comparison with market rents for comparable accommodation in a conventional private sector apartment building.

As was noted above, Model #3 is, in many respects, similar to Model #2, except that it involves adding space to an existing dwelling either vertically or horizontally to facilitte a conversion. Obviously, the architectural or physical alternatives for adding to and converting a single family dwelling are too numerous to count. The pro forma provided in Figure 3, examines the economics of converting a 1,800 square foot dwelling into three roughly equal sized, one bedroom apartments. In order to affect such a conversion, however,

the investor finds that a 150 square foot addition is required to the ground floor of the house in order to accommodate a one bedroom apartment on this floor. The pro forma examines the implications of three of the four standard acquisition costs assumed in the other models with the standard assumptions concerning equity, return on equity, and interest rates.

The break-even monthly rents per unit amount to $375., $523. and $705. at acquisition costs of $50,000., $100,000., and $150,000. respectively. As with Model #2, these rents are slightly above the average rents for a one bedroom apartment in the various case study municipalities, but are significantly lower than the rent required to show a break-even situation on a one bedroom apartment in a new apartment building.

FIGURE 3: MODEL #2 BY NON-RESIDENT INVESTOR TO ACCOMMODATE 3 HOUSEHOLDS (BY ALTERING AND ADDING 150 SQUARE FEET TO THE EXISTING DWELLING)

CREATION COSTS			
1. Acquisition Costs	50,000.	100,000.	150,000.
2. New Construction/Alteration Costs	22,500.	22,500.	22,500.
3. Soft Costs @ 20% of Alter.	4,500.	4,500.	4,500.
4. Holding Costs for 3 months @ 12%	1,500.	3,000.	4,500.
Total Creation Costs	88,500.	130,000.	181,500.
Equity Position (25% of Creation Costs)	22,125.	32,500.	45,375.
Remaining Costs to Finance	66,375.	97,500.	136,125.
FINANCING COSTS			
1. Return on Equity (10%)	2,210.	3,250.	4,540.
2. Remaining Costs @ 12%	7,965.	11,700.	16,335.
Total Financing Costs	10,175.	14,950.	20,875.
OPERATING COSTS			
1. Taxes	885.	1,300.	1,800.
2. Insurance	165.	275.	390.
3. Maintenance/Upkeep	500.	500.	500.
4. Heat and Utilities	1,800.	1,800.	1,800.
Total Operating Costs	3,350.	3,875.	4,490.
TOTAL ANNUAL COSTS	13,525.	18,825.	25,365.
TOTAL ANNUAL COSTS PER UNIT	4,508.	6,275.	8,455.
BREAK-EVEN MONTHLY RENTS	375.	523.	705.

6.0 MODEL #4 ANALYSIS

> "Building a second or third residence on a lot which presently has one dwelling unit in place (e.g. back lot or side lot development)."

It is highly unlikely that an individual homeowner would undertake this form of intensification given that it would require considerably more development expertise and effort than a homeowner may be capable of or willing to put in. This is not to say that an individual homeowner would not undertake to sever off and sell part of their lot, where the potential exists, for someone else to build one or more new dwelling units.

As with Models#2 and #3, Model #4 presents countless physical possibilities and architectural alternatives depending on a range of variables such as lot size, street frontage, setbacks, etc. We have chosen in Figure 4 to illustrate the economics of building two stacked, 500 square foot apartments at the rear of an existing single-family dwelling lot that is accessible to the rear by way of a public lane. The pro forma assumes that the existing single-family dwelling would be rented out as such. In certain situations, an investor would likely be inclined to convert the existing dwelling to two or three self-contained units as well as per Model #2. Obviously, this would have the effect of lowering the break-even rents for all units (old and new).

Figure 4 examines the economics of the proposed type of infill under three of the four acquisition cost assumptions. As noted, construction costs are assumed at $40. per square foot and soft costs at 30% of construction costs. While holding costs are calculated over a six month period, it is quite possible that these would be reduced to almost nothing if the investor could establish an immediate cash flow from renting the existing dwelling. As with the other models, equity is assumed at 25% of creation costs, with an annual return of 10% and financing costs are set at 12%.

To arrive at total annual costs attributable to the existing dwelling and the two new units, we arbitrarily assumed a 40/60 split. The total annual costs, split in this manner, create break-even rents of $385., $557. and $725. per month for each of the new units and $519., $743. and $966. for the existing dwelling.

If, as noted above, the investor were to convert the existing house as well into three, self-contained apartments roughly equal in size to the new units being built and divided the annual costs equally among the five units, the break-even monthly rents required per unit would range from $325. to $550.

FIGURE 4: MODEL #4 BY NON-RESIDENT INVESTOR TO CREATE 2 NEW ATTACHED DWELLINGS TO THE REAR OF AN EXISTING SINGLE FAMILY DWELLING

CREATION COSTS			
1. Acquisition Costs	50,000.	100,000.	150,000.
2. Construction Costs*	50,000.	50,000.	50,000.
3. Soft Costs @ 30% of Const.	15,000.	15,000.	15,000.
4. Holding Costs for 6 months @ 12%	3,000.	6,000.	9,000.
Total Creation Costs	118,000.	171,000.	224,000.
Equity Position (%)	25%	25%	25%
($)	29,500.	42,750.	56,000.
Remaining Costs to Finance	88,500.	128,250.	168,000.
FINANCING COSTS			
1. Return on Equity (10%)	2,950.	4,275.	5,600.
2. Remaining Costs @ 12%	10,620.	15,390.	20,160.
Total Financing Costs	13,570.	19,665.	25,760.
MAINTENANCE COSTS			
1. Taxes	1,000.	1,500.	2,000.
2. Insurance	250.	370.	480.
3. Maintenance/Upkeep	750.	750.	750.
Total Maintenance Costs	2,000.	2,620.	3,230.
TOTAL ANNUAL COSTS	15,570.	22,285.	28,990.
TOTAL ANNUAL COSTS PER UNIT	6,228.	8,914.	11,596.
ANNUAL COSTS OF EXISTING DWELLING (40% of Total)	6,228.	8,914.	11,596.
BREAK-EVEN MONTHLY RENT FOR EXISTING DWELLING (Excluding Heat and Utilities)	519.	743.	966.
ANNUAL COSTS PER UNIT OF TWO NEW UNITS (60% of Total)	4,746.	6,585.	8,697.
BREAK-EVEN MONTHLY RENT FOR NEW UNIT (Excluding Heat and Utilities)	395.	557.	725.

7.0 MODEL #5 ANALYSIS

> "Building several separate dwelling units on a lot which already has a multiple family development in place (e.g. building on the landscaped open space around a high-rise building)."

This type of residential infill will only be undertaken by a developer/investor and probably is most applicable to the existing owners of multiple unit rental projects where there exists potential site area for such infill.

Figure 5 provides a simple pro forma analysis of what rents would be required to show a break-even position on the construction of ten new, 1,200 square foot, three bedroom rowhouses on the site of an existing hypothetical multiple unit rental apartment building. The analysis assumes that this infill development would be undertaken by the current owner of the apartment building and, therefore, no land costs and holding costs are calculated in the creation costs. As indicated in Figure 5, the break-even rent per month for each house would be in the order of $675. excluding heat, utilities and parking. This rent would appear to be at least comparable to similar accommodation in any of the case study municipalities and considerably below market in certain areas such as Toronto and North York.

MODEL #5: BY NON-RESIDENT INVESTOR TO CREATE 10 ADDITIONAL ROWHOUSE TYPE RENTAL UNITS

CREATION COSTS	
1. Acquisition Costs	---
2. Construction Costs*	480,000.
3. Soft Costs @ 30% of Const.	144,000.
4. Holding Costs for 6 months at 12%	---
Total Creation Costs	624,000.
Equity Position (25% of Creation Costs)	156,000.
Remaining Costs to Finance	468,000.
FINANCING COSTS	
1. Return on Equity (10%)	15,600.
2. Remaining Costs @ 12%	56,160.
Total Financing Costs	71,770.
OPERATING COSTS	
1. Taxes	6,240.
2. Insurance	1,200.
3. Maintenance/Upkeep	1,900.
Total Operating Costs	9,340.
TOTAL ANNUAL COSTS	81,110.
TOTAL ANNUAL COSTS PER UNIT	8,111.
BREAK EVEN MONTHLY RENTS (utilities and heating not included)	675.

*1,200 sq. ft. units with construction costs at $40. per sq. ft. = $48,000./unit.

PART 3.2.2

COMPARATIVE MUNICIPAL COSTS ASSOCIATED WITH INTENSIFICATION OF EXISTING HOUSING AND NEW SUBURBAN HOUSING

Prepared by:
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3.2.2 COMPARATIVE MUNICIPAL COSTS ASSOCIATED WITH INTENSIFICATION OF EXISTING HOUSING AND NEW SUBURBAN HOUSING[1]

1.0 INTRODUCTION

Most new housing is built on raw land at the surburban fringe. To accommodate this growth, municipalities have to extend roads, trunk services and build infrastructure such as recreation facilities, schools, and fire stations. Moreover, municipalities are faced with the operating costs associated with these new facilities.

It is commonly stated that the encouragement of more new housing in the older serviced areas of communities offers the potential of considerable cost savings to municipalities. The service infrastructure in these areas frequently was designed to serve a population larger than the present population. Hence, additional population could be accommodated at lesser incremental costs (both capital and current) than equivalent growth in new suburban areas.[2] The following illustrates this line of reasoning:

> "The public has a very large investment in infrastructure - schools, parks, sewers, transit, roads, etc. - that could serve a population of perhaps 800,000 but the City's population has dropped below 600,000 and is still falling. Meanwhile, new infrastructure has to be built in other municipalities on the urban fringe".

However, not all financial analyses support this viewpoint. A recent analysis of three alternative growth scenarios for Winnipeg (business an usual, directed suburban and containment) concluded that differences in annual capital expenditures were relatively small and that future propertytax rates would not be significantly different under any of the scenarios:

> "The alternative spatial options had been originally developed in the hope that substantial long-term savings in the City's capital expenditures could eventually be realized through most efficient utilization of the

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1 The term "municipality" is used in a general sense to refer to lower tier and upper tier municipalities, their commissions and agencies, and to school boards.

2 City of Toronto Planning and Development Department, Memorandum to the Committee on Neighbourhoods, Housing, Fire and Legislation entitled City Housing Policies and the Impact of Deconversion as Reported in Research Bulletin 16, September 3, 1980, page 2.

> infrastructure already in place. The primary reason these savings failed to materialize on closer examination is apparently due to capacity limitations in existing infrastructure"[1].

The purpose of this paper is to present an analytical look at the comparative costs and revenues associated with additional infill/conversion housing versus additional suburban housing in order to ascertain the potential magnitude of cost savings associated with the former. The emphasis is on net costs (additional costs less additional revenues). Reference is made where possible to the case study municipalities.[2]

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[1] Drew McArton, Urban Financial Analysis, Winnipeg Development Plan Review, May, 1980.

[2] The case study municipalities are the cities of Toronto, North York, Ottawa, Woodstock, Hamilton and Kingston.

2.0 ISSUES IN SELECTING A FISCAL IMPACT FRAMEWORK

A number of factors have to be considered in conducting a comparative cost analysis of additional infill/conversion and suburban housing:

- Site Specific Versus a Broad Area Approach.

  One approach would be to compare the costs of infill/conversion residential projects on specific sites with identical developments in the suburbs. This approach was used in a recent study done by Peter Barnard Associates and Richard Drdla Associates.[1]

  Two major problems are encountered using the site specific approach. Firstly, it is highly unlikely that identical residential projects will be built in the older parts of a community and in the suburbs. Land costs typically are lower in suburban locations with the consequence that residential development tends to be of lower density (the composition of the residents will generally be different as well). And secondly, the municipal costs associated with specific sites are not necessarily representative of most sites in suburban or existing areas.

  A more fruitful approach would be to consider costs for a sizeable undeveloped suburban land parcel and compare these with an equivalent amount of residential infill/conversion development in a fairly large existing area. This approach would tend to remove some of the variation in costs associated with specific sites. However, there still is the difficulty of dissimilar forms of development (and, hence, a potentially different population mix).

- The Comparison of Dissimilar Forms of Residential Development

The most common type of residential development in fringe suburban locations is the single-detached house. In contrast, the units produced in infill situations or through conversions are typically apartments. It would not be right to compare the costs associated with these two divergent housing forms in assessing the municipal finance implications of development in existing and fringe suburban locations. Similarly, to compare single-detached houses built in existing areas with those in suburban locations (or vice-versa for apartments) would be misleading because of the much higher values of the former.

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1 Peter Barnard Associates and Richard Drdla Associates, Infill and Energy Conservation in Existing Communities, prepared for the Ontario Ministries of Housing and Energy, July, 1981.

One way to deal with this problem is to limit the analysis to a comparison of single-detached houses in the suburbs and the lowest possible density of housing in an existing area having the same per dwelling unit average values as the suburban housing.

To get the same population mix using this approach, it would be necessary to assume that suburban households are indifferent between living in the suburbs and in the existing built-up part of the community. This would be the situation if price was the only factor affecting housing choice. In actual fact, many households choose a single-detached house in the suburbs as a lifestyle decision. They would be indifferent between existing and suburban locations only if they could have a single-detached house on similar-sized lots at approximately the same price (which is not likely to be the case).

. The Existence of Excess Capacity in Suburban Locations

The cost savings argument linked with infill/conversion residential development implicitly assumes that municipal services in fringe suburban locations do not have excess capacity whereas excess capacity exists in the existing community. This is likely to be the case for land which cannot be developed for many years into the future. However, many municipalities have already installed infrastructure (such as sewer and water treatment plants and trunk services) on a sufficient scale to enable large tracts of still undeveloped land to be readily serviced. Hence, the incremental capital costs associated with further suburban development may not be as great as initial impressions might suggest.

. Suburban Capital Costs Frequently are Paid By Developers or The Provincial Government

The cost calculations which influence municipal decision-making are not necessarily the actual capital costs of servicing additional residential development in existing versus suburban areas. Municipalities have established a system whereby the financing of capital infrastructure in the suburbs has been mainly shifted to land developers and builders. Thus, from a capital cost perspective, a municipality may be indifferent between new residential development in older serviced areas and development on the suburban fringe. Capital contributions by the provincial government for new infrastructure reinforces this behavioural pattern.

. The Establishment of Comparable Service Standards

Fiscal impact discussions are frequently couched in terms of the costs of new infrastructure in the suburbs versus excess capacity in the existing infrastructure in older areas. Since the life expectancies of new and older infrastructure are not the same, it is not valid to do a simple comparison between, say, the stream of services provided by a 30 year old existing arena and a brand new arena. Infrastructure wears out and

eventually has to be replaced. Hence, the cost comparison should explicitly recognize that a 30-year old arena is not equivalent to a new arena.

One way of handling this issue is to incorporate only a portion of new infrastructure costs in a suburban area into the cost analysis. The costs to be included would be based on the average life expectancy of the infrastructure in the case study existing area.

- Increased Grant Revenues Could Offset Current Property Tax Revenue Deficiencies

If real property assessment per dwelling unit for infill/conversion housing is more than or the same as for new suburban housing, the current revenue shortfall from property tax revenues relative to operating costs will likely be greater for suburban housing (this assumes that capacity constraints are more of a problem in suburban areas). However, a portion of this shortfall could be offset by higher grant revenues from the Province.

Under the resource equalization grant municipalities whose equalized assessment is below $18,800 per capita receive unconditional grants from the Province which are larger, the greater the gap between the municipality's equalized assessment per capita and $18,800. A grant rate based on the size of the assessment gap is applied to selected local revenues raised to determine grant revenues. Beginning in 1981, the Province placed restrictions on the maximum eligible annual revenue that a municipality can receive under the resource equalization grant. This would significantly reduce the scope for offsetting grant revenues to cover rising costs per dollar of assessment. However, grant revenues could be reduced if relatively more residential development in a municipality receiving grants were to take place in existing areas (assuming development in existing areas is more cost-effective).

Education financing works in a similar way as the resource equalization grant, however, there is no ceiling on the total dollar sum of the grant revenues (assuming per pupil costs do not exceed the costs recognized for grant purposes). The lower the equalized assessment per pupil in a jurisdiction, the larger the provincial assistance per pupil.

Some specific operating grants also rise if municipal costs increase. The Ministry of Transportation and Communications, for example, pays 50 percent of the costs of approved road maintenance and improvements. To the extent these costs are higher because of new suburban development, the total grant revenues paid to a municipality could also be higher.

3.0 A FISCAL IMPACT FRAMEWORK

A scheme of the fiscal impact framework formulated for the analysis here is presented on the following page. The main features are discussed below.

3.1 Delimiting a "Municipality"

The term "municipality" as used to this point refers generally to all local government entities including lower and upper tier municipalities and their commissions and agencies (e.g., public utilities and library boards) and public and separate school boards. In the analysis which follows the emphasis will be on lower tier municipalities and public school boards (a more comprehensive analysis would, of course, consider the other entities as well).

3.2 Choice of Case Study Areas

For the analysis here it is assumed that suburban development consists mainly of single-detached houses while development in existing serviced areas consists of the lowest density housing possible having the same average dwelling unit price as the suburban area.

The actual types of housing in existing case study areas will largely be a function of the differential between land prices on the fringe and land prices in older parts of the community (other factors affecting housing types include zoning regulations and neighbourhood quality). In a smaller city, like Woodstock, the predominant housing types in infill situations could be townhouses; in a large city, like Toronto or Ottawa, the housing could largely by low- or medium-rise apartments.

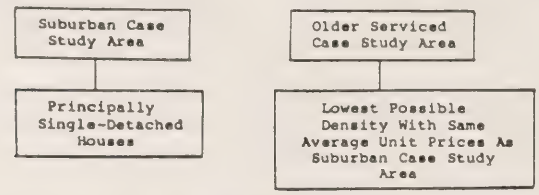
This assumption simplifies the analysis in several ways. For urban areas where the existing and suburban case study areas are within the same municipality, real property tax assessments and property tax revenues will be the same in the two case study areas. It also means that equalized assessment per capita and per pupil will be the same in the case study areas since it is implicitly assumed that the characteristics of residents are the same in the existing and suburban case study areas.

3.3 Comparison of Net Capital Costs

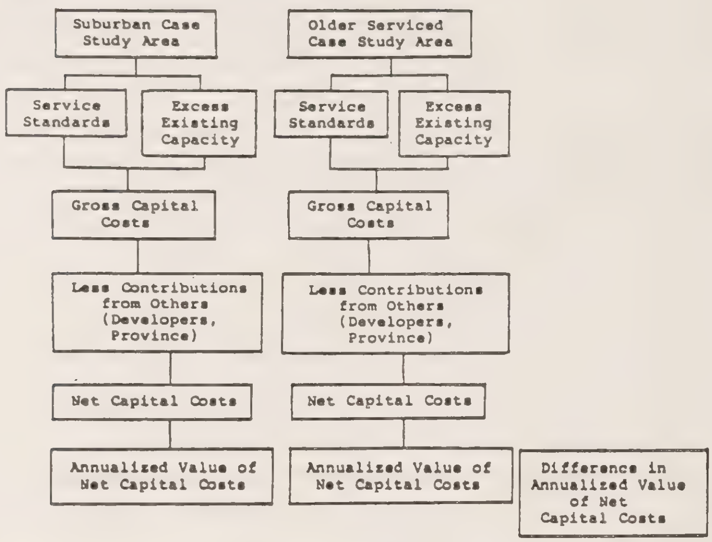
The capital costs associated with residential development in existing versus suburban areas are a function of service standards as well as available service capacity. It is a requisite of the analysis that service standards between existing and suburban areas be the the same. As previously discussed, a 30-year old school or arena is unlikely to provide the same standard of service (or at least not over the same number of future years) as a new school or arena.

FRAMEWORK FOR COMPARING NET FISCAL IMPACT OF INFILL/CONVERSION VERSUS SUBURBAN RESIDENTAL GROWTH

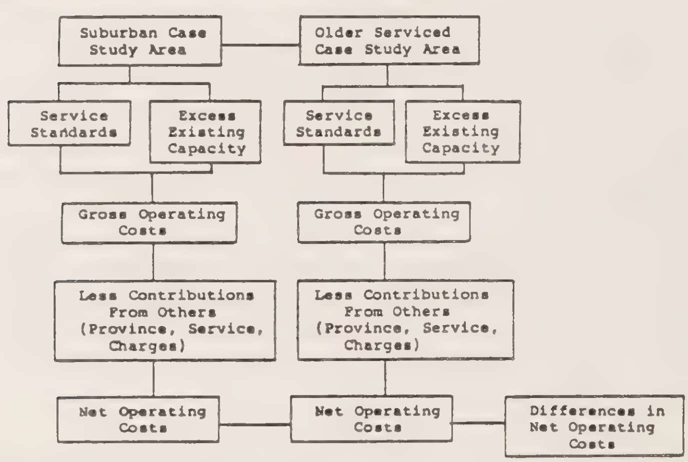
Choice of Case Study Areas



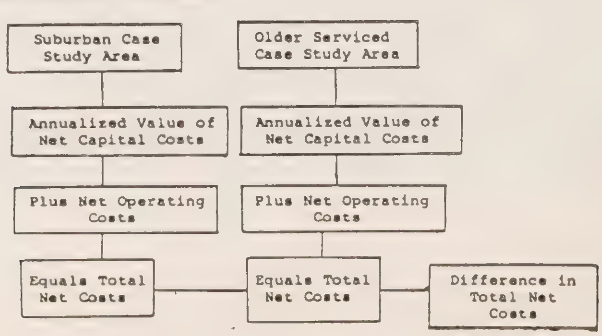
Comparison of Capital Cost Differences



Comparison of Operating Cost Differences



Comparison of Combined Capital and Operating Cost Differences



It is not possible to examine in detail within the constraints of the present study the capacity situation for each service or service standards in the case study municipalities. What has been done is to ask municipal treasurers and public school board officials to indicate what they regard the current capacity situation in their municipality to be. Hence, exact capital cost estimates for servicing residential development in existing and suburban locations are not produced.

The total cost of providing an equivalent standard of capital services in the two case study areas has to be adjusted for the contributions toward these costs received from developers (and builders) and others (mainly the Province). It is a general practice across Ontario for municipalities to require developers to pay the costs of all internal "hard" services within their subdivision. Many municipalities apply lot levies only to new suburban developments. In addition, the Province often contributes to the cost of new infrastructure such as sewage treatment plants and roads. For municipalities, the actual capital costs they bear in both existing and suburban locations are the gross costs less these contributions.

These net capital costs are converted to annualized figures in order that they can be combined with operating costs figures.

The discussion below summarizes the lot levy policies of the six case study municipalities and the types of capital grants made by the Province.

3.4 Comparison of Net Operating Costs

The ongoing costs associated with additional residential development in older serviced areas versus the suburban fringe are also a function of service standards and available excess capacity. If, for example, the response time for police or ambulance calls are shorter in the older part of the community, this should be reflected in the cost analysis; similarly with a fully-manned suburban fire station which is intended to serve a population larger than the current one.

Again, the procedure adopted here is to gain a general indication of excess service capacities in existing versus suburban areas through responses from municipal treasurers in the case study municipalities and through contacts with public school board officials. Potential differences in service standards are not considered.

With property taxes and service charges basically the same in the case study areas (existing versus suburbs), the only revenue item that could differ significantly is provincial grants. Differences in resource equalization and education grant revenues among areas are considered here.

This analysis brings together the general findings for capital costs and operating costs with the emphasis being on net costs (gross costs less revenue offsets). The discussion is qualitative since a complete tabulation of costs and revenues has not been prepared.

4.0 THE ANALYSIS OF NET COSTS

4.1 Municipal Observations on Capital Infrastructure Capacity

City of Toronto: The City of Toronto has not done any studies of the excess capacity inherent in its present infrastructure. However, intuitively, since the City once provided services for a much larger population than the present population (the City's population fell from about 713,000 persons in 1971 to 599,000 in 1981), it seems reasonable to conclude that significant excess capacity exists in many services.

The Core Area Housing Study prepared for the City of Toronto in 1974 concluded that in general there would be major financial benefits to encouraging more housing to be built in the core of the City, especially in the areas of transportation and underground services:[1]

- For new core residents working in the core there could be a reduction in the journey to work by automobile and more walking to work or using public transit; for core residents employed outside the core there would be more use of outbound road and transit facilities during the morning rush hour (and vice versa in the evening) which at the peak hours are under-utilized.
- For social infrastructure like social and health services and underground services like water supply and waste disposal it would be cheaper over-all to use the existing facilities and to expand them as required rather than to create an entirely new structure where one does not exist.
- On the other hand, parks and schools have to be increased in relationship to population increase no matter where such growth takes place.

The Board of Education for the City of Toronto reports that it has excess capacity in existing elementary schools but that enrollment in its secondary schools is very near capacity. The elementary schools could accommodate another 15,000 students over the current enrollment of around 43,000. The Board contact felt that more efficient use of elementary schools would be to the Board's financial advantage.

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1 Klein and Sears and Damas and Smith Limited, Core Area Housing Study, December, 1974, pages 23-24. The study concluded that the water supply system serving the core was sufficient to satisfy a population of up to 250,000 persons (the 1971 population was about half this number). In contrast, some storm and sanitary drainage system improvements would be required to serve a significantly large population in the core. Additional parkland would be required in the core as well.

The Core Area Housing Study also concluded that there was some excess capacity in schools in the core of the City. However, it warned that the existing capacity was not necessarily located in areas where the greatest opportunities existed for new family housing. It stated that a considerable expansion of school facilities would be required, especially elementary schools.

City of North York: The City of North York was not able to provide information on capacity available in its services.

The Board of Education for the City of North York reported that it has substantial excess capacity in its elementary schools (more than 30,000 pupil places) but only a modest amount of available capacity in its junior high schools and little if any effective excess capacity in its senior high schools.

City of Ottawa: The City of Ottawa in general has sufficient excess capacity in the service infrastructure in existing areas to accommodate a significant expansion in population. This situation would not differ for family households as compared to non-family households. While all services have the capacity for future growth, water and sewer lines would have to be upgraded in some areas.

The City also reports that all residentially zoned vacant lands in the city are serviced for future development. Trunk lines have been extended to the City limits. New community centres are being built to accommodate short and long-term population growth.

The Ottawa Board of Education has significant excess capacity at both the elementary and secondary school levels - about 6,000 secondary and 8,000 elementary students. The Board contact seemed to feel that with the existing provincial grant structure improved efficiency in existing schools would not really help the Board very much financially.

City of Hamilton: The Regional Municipality of Hamilton-Wentworth reports that recreational, health, police, fire, library, transport and roads are generally available to service significant increases in population in older built-up parts of the City. Some upgrading of the sewer system and some additional parkland would be required (there is an ongoing program to increase the capacity of both sewers and parks).

While the City has no significant excess service capacity already in fringe suburban areas, it is committed to the provision of services to these areas. Services are provided in concert with the expansion of suburban areas though there would have to be a significant expansion in population before new recreation centres are built. The City considers increased population in the older parts of the City, especially in the Central Core, through conversion,

infilling or redevelopment at high densities to be very desirable in terms of use of services and energy.[1]

The Board of Education for the City of Hamilton reports the existence of considerable excess capacity in existing schools (about 14,000 places overall). Thus, additional students could readily be accommodated without building new schools. The Board contact felt that it was in the financial interest of the Board to decrease costs.

City of Kingston: The older central city areas would appear to have an infrastructure of both "hard and soft" services which is more capable of accommodating population growth than the suburban areas. The City's Official Plan indicates the population capacity of the City (both the development capabilities of undeveloped sites and redevelopment areas) is about 90,000 persons. Present population is 60,000. It should be noted that this estimate was made at a time when average occupancy per dwelling unit was higher than at present. An estimate made today might show a lower but still substantial capacity. The City of Kingston has only a limited amount of undeveloped fringe area land within its boundaries (most residential potential in the area is outside the City).

The City reports that "hard" services are in place in its remaining fringe areas but that some additional "soft" services will likely be needed as these areas develop.

The Frontenac County Board of Education has effective capacity for another 800 students in the elementary schools but less excess capacity in its secondary schools.

City Of Woodstock: The City of Woodstock was not able to provide information on service capacities.

The Oxford County Board of Education reports that existing spaces in schools are being used to near capacity. Surplus schools have either been shifted to other uses (e.g., libraries) or have been sold.

4.2 Developer Financing Policies[2]

Suburban developers are generally required to pay for and construct internal services within their subdivisions. These services include, among other

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1 See Planning and Development Department, Regional Municipality of Hamilton-Wentworth, Central Area Plan for the City of Hamilton, January, 1981.

2 The discussion here is based in large part on Giffels Associates Limited, Survey of Lot Levy Practices in Ontario, January, 1981. The six case study municipalities were contacted to obtain more current lot levy figures.

things, sewers, roads, curbs, sidewalks, street lighting and landscaping. Most municipalities, in addition, require developers to pay a lump sum payment to apply against the cost of sewer and water treatment plants, trunk lines, extention of arterial roads, construction of recreation facilities, etc. Lot levy practices in the case study municipalities are summarized below.

City of Toronto: By-law No. 341-67 provides for special charges on buildings which may impose a heavy load on the sanitary or storm sewer system. These charges amount to 50 cents for each square foot of gross floor area (less a 3,000 square foot exemption for each structure). For an apartment unit with 1,500 gross square feet the levy would be $750.

City of North York: The Parks Fund Charge requires that $400. per suite be paid on increased density for plans of subdivision and zoning amendments. Sewer impost charges are levied based on $5. per front footage for single-family houses ($250. for a 50 foot lot) and $100. per unit plus $1,090 per acre for multiple dwellings (about $136. per unit at 30 units per acre).

The Municipality of Metropolitan Toronto does not impose lot levies. Neither the City of Toronto nor the City of North York have tracts of undeveloped suburban lands.

City of Ottawa: The City of Ottawa imposes levies of $600.-$900. per unit on subdivision land zoned for single-family dwellings. Levies on multiple land are based on $3,600. per acre plus $300. per unit ($420. per unit at 30 units per acre).

Redevelopment charges are levied at $375. per dwelling unit (single-family dwellings are excluded).

The Regional Municipality of Ottawa-Carleton does not impose lot levies.

City of Hamilton: The City of Hamilton imposes a levy in new subdivisions to raise funds for capital services such as roadways, sidewalks, recreation facilities and libraries. The charges range from $500. per unit (one to three unit structures) to $350. (structures with four units or more). The levies were established at this relatively low level to encourage growth.

The Regional Municipality of Hamilton-Wentworth also imposes a levy for sanitary sewer, storm sewer and water services in new subdivisions. The land area rate for complete services is $1.60 per square metre of land area to a maximum of $1,264. per single-family dwelling. The density charge of $220. per unit applies to structures with three or more units.

City of Kingston: The City of Kingston imposes a charge to cover the cost of additional sanitary sewer capacity which would otherwise not be required. The per unit charge of $375. applies only to structures having more than two units. Most growth in recent years in Kingston has been via infilling rather than subdivisions.

City of Woodstock: The City of Woodstock applies a $1,050. levy on new dwelling units in new subdivisions and on redeveloped sites requiring rezoning.

Three of the case study municiplities, then have little, if any, undeveloped land available for new subdivisions. These are the cities of Toronto, North York and Kingston. In all three instances the lot levy charges are fairly low. However, in suburban areas beyond the boundaries of these cities lot levies are considerably higher. To illustrate:

- In the Town of Markham, just to the north of North York, new development faces a levy of $2,625. per unit (made up of an administrative lot fee levy, a sewer levy and a water levy).

- In Kingston Township the levy is $2,125. for dwellings with three or more bedrooms.

In these instances it is fair to conclude that the revenue offsets through lot levy contributions are considerably higher for suburban than for infill/conversion residential development.

For Hamilton the differential revenue offsets are smaller; while levies are not imposed on infill or for redevelopment situations, the levy on suburban residential development is low compared with suburban Toronto municipalities. This is similar to Ottawa, where the suburban levies are not substantially different from the levies on redevelopment sites.

Woodstock applies the same levies to rezonings as to suburban development.

4.3 Capital Grants from the Province

The province provides financial assistance for a variety of capital projects undertaken by municipalities. Some of the more important of these are discussed below.

Major Water and Sewage Works: The Ministry of the Environment provides grants equal to 15 percent of the capital costs (after deduction of federal or other grants) for water and sanitary sewage treatment facilities and trunk lines. Priority is given to:

- Works to service an area encompassing more than one municipality; and

- Works providing for an increased supply of serviced lots in growth areas.

These grants thus reduce municipal costs with respect to suburban residential growth.

Schools: The Province currently approves and pays for most of the capital costs for new schools. Current policies favour the creation of new pupil places in areas where student enrollments are rising rapidly. About 90 percent of school construction grants go toward the construction of new schools.

Hospitals: Capital grants for hospital construction are based on need. There is no policy to encourage either the construction of new hospitals or the renovation of existing hospitals (currently the split in grant funds is about 50/50).

Housing: The Ministry of Municipal Affairs and Housing has a number of capital grant or preferred interest loan programs which assist municipalities to renew older parts of the community. These include the Ontario Home Renewal Program, the Ontario Downtown and Main Street Revitalization Programs, and the Ontario Neighbourhood Improvement Program.

Roads: The Ministry of Transportation and Communications provides grants equal to 50 percent of approved road construction expenditure. Most of these funds are applied to the reconstruction and maintenance of existing roads.

Wintario Capital Grants: The majority of Wintario grants for the purchase, construction or renovation of cultural and recreation facilities have gone toward the construction of facilities where none previously existed. There is no firm policy which encourages the construction of new as opposed to the renovation of existing structures.

Public Transportation: The Ministry of Transportation and Communciations makes sizeable contributions (75 percent) towards subway construction expenditures and the cost of buses, transit terminals, etc. Since these facilities often tend to enhance accessibility between suburban and more central areas, these grants help offset the costs of additional suburban development.

The preliminary investigations conducted as part of this study tend to show that on an overall basis provincial capital grant programs provide more financial assistance to new suburban areas than to existing areas.

4.4. Municipal Observations on Operating Infrastructure Capacity

The comments here are restricted to school boards as municipal staff was unable to provide information on operating capacities.

City of Toronto: According to the Board of Education for the City of Toronto, additional teachers would be needed both at the elementary and secondary levels to accommodate further residential growth. Since teachers' salaries and fringe benefits account for approximately two-thirds of total education expenditures, the cost savings associated with the more efficient utilization of the elementary schools would be around one-third of per pupil costs.

City of North York: The contact at the Board of Education for the City of North York stated they could probably handle some additional students at the secondary level without hiring more teachers but would need more teachers at the elementary level.

City of Ottawa: The Ottawa Board of Education is operating below capacity in terms of student/teacher ratios in some schools and for some groups of students. Thus there is some scope for adding students without adding teachers.

City of Hamilton: Since the Board of Education for the City of Hamilton operates on a fixed student/teacher ratio, additional teachers would have to be hired to accommodate additional pupils in existing schools.

City of Kingston: The situation for the Frontenac County Board of Education is essentially the same as for the Board of Education for the City of Hamilton.

City of Woodstock: The Oxford County Board of Education was not able to provide information on excess operating capacity.

4.5 Operating Grants from the Province

Unconditional grants: The only unconditional grants which could be materially affected by a shift in residential growth to existing areas are the resource equalization grant and the general support grant. To the extent future municipal costs are reduced because of the more effective use of existing infrastructure, municipalities would receive less revenues under these grant programs. Because of the ceiling now imposed on the resource equalization grant, the converse does not generally hold for higher costs due to more suburban growth; municipalities would, however, receive additional revenues under the general support grant.

Education grants: As long as a school board's per pupil expenditures do not exceed the limits set by the Ministry of Education, the net costs of utilizing surplus existing capacity versus new schools would be about the same for most school boards.

5.0 CONCLUSIONS

There can be little doubt that as a general rule it is more cost-effective for municipalities to utilize surplus infrastrucure capacity in the existing community rather than to build new infrastructure at the suburban fringe. However, this generalized finding will be significantly affected by several factors including:

- The extent to which there is not excess capacity in the existing community and the extent to which there is surplus capacity in the suburbs; and
- The extent to which developers/builders and the provincial government pay a share of suburban growth costs.

It is not possible to arrive at definitive conclusions relating to net costs of existing versus suburban residential development in the case study municipalities. However, it does seem as though the cost savings arguments for encouraging more development in existing areas are less forceful than initial impressions would seem to indicate. This is because: (a) the existing service infrastructure frequently has been designed with the intention to accommodate additional fringe suburban growth (this is especially true for "hard" services); (b) much of the capital infrastructure costs are paid initially by developers/builders and ultimately by homebuyers and (c) a portion of the capital costs of suburban infrastructure is paid by the Province of Ontario (and hence the taxpayers of Ontario).

The fact that municipalities generally pay only a small portion of the capital cost of new suburban infrastructure acts as a disincentive for municipalities to encourage more housing to be created in older parts of the community through infilling and conversion. Muncipalities quite naturally base financial decisions on the net costs to them rather than the gross costs. In the case of fringe suburban infrastructure, a portion of the costs is shifted to homebuyers and Ontario taxpayers in general. If the provincial grant and the developer financing system were neutral between further suburban and additional residential development in exisitng areas, then it is likely that more residential development would occur in built-up areas. This would be a more efficient development pattern from the perspective of costs to society as a whole.